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78

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,160	09/10/2001	Akiyoshi Kabe		9208

7590 10/04/2006
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EXAMINER

RUTTEN, JAMES D

ART UNIT PAPER NUMBER

2192

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/936,160	Applicant(s) KABE, AKIYOSHI	
Examiner J. Derek Rutten	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 August 2006.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 and 14-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11 and 14-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 August 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/28/2006 has been entered.
2. This action is in response to Applicant's submission filed 6/28/2006, responding to the 2/28/2006 Office action which detailed the rejection of claims 1-11 and 14-17. Claims 1, 5, 6, 10, 14, and 16 have been amended. Claims 1-11 and 14-17 remain pending in the application and have been fully considered by the examiner.

Response to Amendment/Arguments

3. The drawings submitted on 8/25/2006 do not comply with 37 CFR 1.121(d) since they do not contain a label in the top margin identifying the drawing as a "Replacement Sheet". As such, these drawings are not acceptable and new drawings must be submitted with the proper labels.
4. Applicant's arguments/amendments appear to resolve the objections to claims 6, 11, and 16. Likewise, these objections are withdrawn.
5. Applicant's arguments filed 6/28/2006 with respect to claims 1-10 and 14-17 have been considered but are moot in view of the new grounds of rejection.

Specification

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Reference to "basic type objects," recited in claim 4, should appear in the specification. Care should be taken to avoid the introduction of new matter (see MPEP § 608.04).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "high frequency" in claim 4 is a relative term which renders the claim indefinite. The term "high frequency" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. This claim appears to be related to the description provided in the paragraph at the bottom of page 33 continuing to page 34. However, no further description was found regarding a "high frequency".

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-6, 8-11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the "Background Art" section of the originally filed specification (pages 1-10, hereinafter "the Background") in view of U.S. Patent No. 6,067,477 to Wewalaarachchi et al. (hereinafter '477).

In regard to claim 1, the Background discloses:

A programming device comprising:

a group of program generation tools to generate programs for each of a plurality of devices forming part of a control system that controls a group of external machines; and ... wherein the plurality of devices includes at least two devices selected from a group of: a display device displaying status of each of the machines, a system supervision device detecting an abnormal condition of a production line comprising the group of machines, and a programmable controller for controlling one or more of the machines.

See bottom of page 2 and Fig. 8 of the Background:

Fig. 8 is a status diagram showing an outline of operation when generating and writing program units in a control system including programmable controllers, a display device and a system supervision device.

In the figure, reference numeral 1 represents programmable controllers for controlling a group of machines 5...

Also see page 4 of the Background:

Further, the peripheral device 17 has a **display program generation tool 171** to generate a display program unit 171a for displaying status information on the machines 5 on the display device 2, a **control program generation tool 172** to generate a control program unit 172a used in the control unit 11 of the programmable controller 1 for controlling the machines 5, a **communication program generation tool 173** to generate a communication program unit 173a used in the communication unit 12 of the programmable controller 1 for establishing communication between the programmable controllers and the system supervision device 3 through the network 4, and a **system supervision program generation tool 174** to generate a system supervision program unit 174a used in the system supervision device 3 for monitoring the state of the production line, detecting the abnormal condition of the line and informing the abnormal condition to the operator. The peripheral device 17 generates these program units separately. [emphasis added]

The Background does not expressly disclose:

a data sharing unit adapted to interface with said group of program generation tools to share a variable name and attribute data definitions corresponding to an object of each of said plurality of devices, wherein the objects are shared by said program generation tools for generating the programs by transferring the variable name and the attribute data definitions corresponding to the object into each respective program generation tool that shares the object... However, this is taught by the '477 patent. See column 9 lines 35-40:

As a data repository, the object server 206 enables service agents to subscribe to this data, and provide real time **updates** of such data to the presentation cells they service. The published data is in the form of **<name, value>** pairs, as described above. [emphasis added]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the '477 patent's teaching of an object server with the Background's programming device in order to provide a unified, hierarchical object model for all of the data received from the underlying devices and systems (see '477 abstract).

In regard to claim 2, the Background does not expressly disclose: *programming action in one of the program generation tools relating to an object acts as a trigger to store a setting of the object to the data sharing unit together with an indication of the program generation tools which reference said object, and the sharing of said object with other program generation tools other than said one of the program generation tools comprises notifying the program generation tools other than said one of the program generation tools which reference said object, of said object.* However, this is taught by the '477 patent. See column 13 lines 28-33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the '477's notification with the Background's programming device in order to provide updated objects (see '477 column 11 line 66 – column 12 line 3).

In regard to claim 3, the above rejection of claim 1 is incorporated. The Background does not expressly disclose: *an object data definition unit adapted to perform data definition and data modification of the objects shared in the data sharing unit, wherein all objects involved in the object sharing are centrally managed.* However, this is taught by the '477 patent. See column 13 lines 28-33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the '477's centrally managed data definition and modification with the Background's programming device in order to provide updated objects (see '477 column 9 lines 35-38).

In regard to claim 4, the above rejection of claim 1 is incorporated. The Background further discloses: *a system configuration tool, being registered with a subset*

Art Unit: 2192

of objects, said subset of said objects being basic type objects having a high frequency of use in the devices in the control system, the system configuration tool being adapted to select an object from the basic types objects for use in the control system. See page 3 last paragraph.

In regard to claim 5, the Background discloses: *wherein the variable name and attribute data corresponding to said object are stored for use by program generation tools other than said one of the program generation tools...* See page 5:

The virtual objects 61 to be controlled are printed in a form of a table having the input/output variable, the data variable and the alarm object, and while referring to the printed table, the operator checks connections with the actual machines 5 and manually **allocates physical addresses such as "XI0", "Y20", "DI00" and "M50" corresponding to the variables by using the display program generation tool 171, the control program generation tool 172 and the like, thereby generating program units such as control programs individually.** [emphasis added]

All further limitations have been addressed in the above rejection of claim 1.

In regard to claim 6, the above rejection of claim 5 is incorporated. All further limitations have been addressed in the above rejection of claim 2.

In regard to claim 8, the above rejection of claim 6 is incorporated. The Background does not expressly disclose: *wherein when an object referenced by a first program generation tool from the group of program generation tools is changed by a second program generation tool from the group of program generation tools, the first program generation tool is notified of the changed object.* However, the '477 patent teaches using a service agent to notify subscribers of updated objects. See column 13 lines 19-44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of the '477 patent with the objects of the

Art Unit: 2192

Background in order to update and monitor real time data (see '477 column 13 lines 19-24).

In regard to claim 9, the above rejection of claim 6 is incorporated. The Background further discloses: *wherein the object is stored to a storage area for subsequent retrieval by the other program generation tools which reference the object when they are started.* See page 5 as referenced in the rejection of claim 5 above.

In regard to claim 10, the Background discloses: *according to the objects registered in the data sharing unit, performing programming of the devices by the notified program generation tools...* See page 5:

The virtual objects 61 to be controlled are printed in a form of a table having the input/output variable, the data variable and the alarm object, and while referring to the printed table, the operator checks connections with the actual machines 5 and manually allocates physical addresses such as "XI0", "Y20", "DI00" and "M50" corresponding to the variables by using the display program generation tool 171, the control program generation tool 172 and the like, thereby generating program units such as control programs individually. [emphasis added]

All further limitations have been addressed in the above rejection of claims 1 and 2.

In regard to claim 11, all limitations have been addressed in the above rejection of claim 1.

In regard to claim 14, the above rejection of claim 1 is incorporated. The Background further discloses: *wherein the group of program generation tools comprises at least two out of a group of: a display program generation tool, a control program generation tool, a communication program generation tool, and a system supervision program generation tool.* However, in an analogous environment, the Background

Art Unit: 2192

teaches this group of program generation tools. See FIG. 8 elements 171-174. The Background does not expressly disclose: *wherein the data sharing unit is adapted to download the same object name and the same object attributes to every program generation tool that shares the object and wherein, when the object name and the object attributes are downloaded into one of the program generation tools, access to the object name and the object attribute data is allowed for other program generation tools.*

However, this is taught by the '477 patent. See column 15 lines 7-15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the name and attribute sharing taught by the 'patent with the objects of the Background in order to ensure correct internal memory arrangement (see '477 column 15 lines 7-9).

In regard to claim 15, the above rejection of claim 1 is incorporated. The Background does not expressly disclose: *wherein for each object of each of said plurality devices, the data sharing unit stores the variable name, the attribute data definitions, and a list of devices, from the plurality of devices forming part of the control system, that refer to the object.* However, the '477 patent teaches this. See column 12 line 52 – column 13 line 44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the data storage of the '477 patent with the data sharing unit of the Background in order to provide updates of the data objects (see '477 column 11 line 66 - column 12 line 3).

Art Unit: 2192

12. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the Background and the '477 patent as applied to claim 6 above, and further in view of "Linkers & Loaders" by Levine (hereinafter referred to as "Levine").

As per claim 7, the above rejection of claim 6 is incorporated. The Background and the '477 patent do not expressly disclose *a detection unit adapted to detect any overlap at a referenced part among the objects when a program is generated by the program generation tools other than said one of the program generation tools*. However, in an analogous environment, Levine teaches that programs can be created from multiple subprograms, but that the subprograms have to be loaded at non-overlapping addresses (page 5 bullet 2: "Relocation"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Levine's teaching of non-overlapping subprograms in Almond's program generation device. One of ordinary skill would have been motivated to protect the integrity of each object by separating their address space.

13. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Background and the '477 patent as applied to claims 14 and 15 above, and further in view of prior art of record U.S. Patent 5,734,902 to Atkins et al. (hereinafter "Atkins").

In regard to claim 16, the above rejection of claim 15 is incorporated. The Background does not expressly disclose: *wherein the data sharing unit stores a object managing table comprising the variable name, the attribute data definitions, the list of*

Art Unit: 2192

devices, and an update status, for each object of each of said plurality devices, and wherein the update status indicates whether or not the corresponding object has been updated. However, the '477 patent teaches using an index table to store object information. See column 10 lines 20-24. The '477 does not expressly disclose a table with a list of devices and an update status. However, Atkins teaches a used-by table and update status. See column 4 lines 22-49. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Atkins' and the '477 patent's table with the Background's storage. One of ordinary skill would have been motivated to use a data structure to store information in order to promote efficiency and quality of service (see '477 column 13 lines 40-44).

In regard to claim 17, the above rejection of claim 16 is incorporated. All further limitations have been addressed in the above rejection of claim 2.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571)272-3703. The examiner can normally be reached on T-F 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2192

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jdr



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